

Sustainability .....

Key Questions:

**What?**

**... to Sustain?**

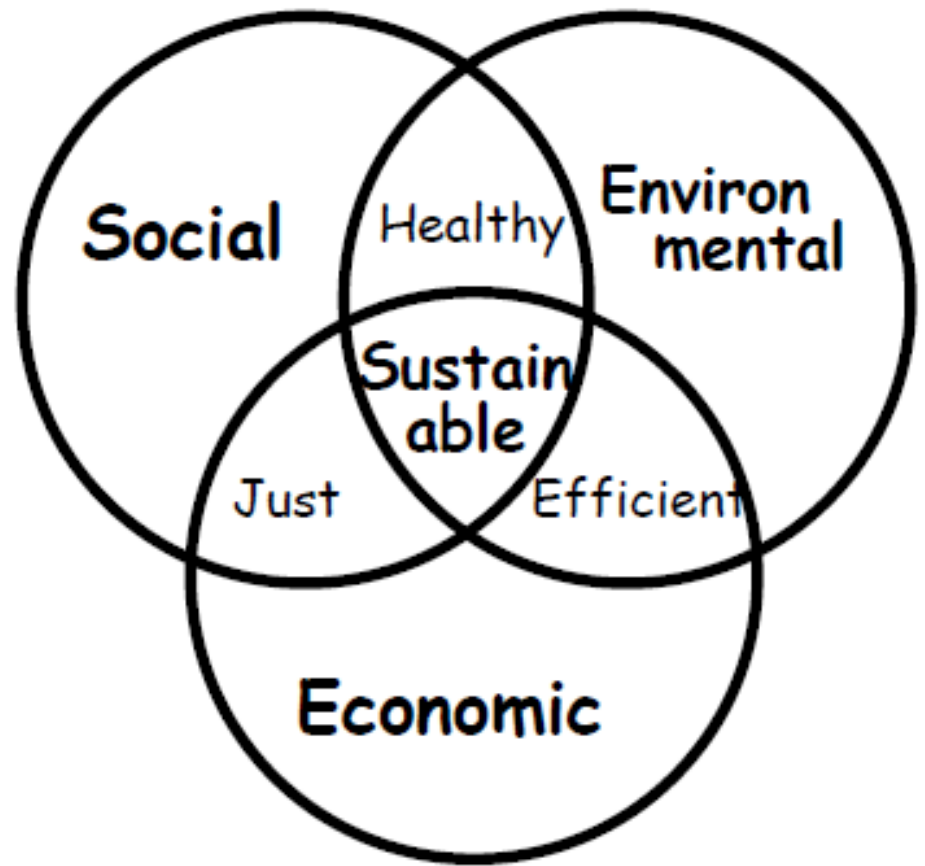
**... to Develop?**

# What is to be Sustained?:

## Broadly Accepted Elements of Sustainability

---

- Economic
  - Human Capital
  - Human-made Capital
- Environment
  - Natural Capital
- Social
  - Social Capital



Adapted from <http://www.state.nj.us/dep/dsr/sustainable-state/what-is.htm>

# What is Economic Sustainability?

---

- Human-made Capital
  - Traditional economic capital
  - Produced means of production
- Human Capital
  - Often simply refers to labor
  - More subtly, the ability of an individual to produce or increase income
    - Knowledge
    - Skills
    - Health
    - Values
  - Activities that increase human capital
    - Education
    - Training
    - Medical care

# Environmental Sustainability

---


- Maintenance of Natural Capital
  - Ecosystem services that enable life
- Sources
  - Stocks of raw materials
  - Flows of renewable resources
- Sinks
  - Capacity to assimilate wastes

# Social Sustainability

---

- Social Capital
  - No Consensus definition
  - Knowledge and rules of interaction in culture and institutions
    - Legal system
    - Government
- Social Sustainability general includes addressing basic needs of population
  - Recognitions of social issues in traditional development economics predate environmental concerns
  - Income distribution
  - Quality of life
    - Illiteracy
    - Hunger
  - Institutional participation
  - Increasing choice

# How much is to be sustained?



Quantity  
or  
Quality



Timeframe

# What is to be Sustained?

## Sustainability Hierarchy (Marshall and Toffel)

---

- Actions are unsustainable that
  - Level 4
    - Reduce quality of life
    - Violate other values
  - Level 3
    - Cause species extinction
    - Violate human rights
  - Level 2
    - Significantly reduce life-expectancy or basic health
  - Level 1
    - Endanger human survival

